

The following claims are presented for examination:

1. (Currently Amended) A method comprising:

receiving, ~~[[at]]~~ by a processor-based device, a communication that comprises ~~at least one a~~ word that is a natural-language word;

generating by the processor-based device a union of terms comprising:

(i) a first set of word-terms, and

(ii) a set of word-classes;

selecting by the processor-based device a plurality of terms from the union of terms, wherein the selecting is based on an information-gain value of each term in the union of terms; and

classifying the communication by utilizing a joint classifier based on application of word information and word class information

performing, by the processor-based device, latent semantic indexing upon the plurality of terms to determine a category of the word.

2. (Cancelled)

3. (Currently Amended) The method of claim 1 ~~wherein further comprising:~~

routing by the processor-based device ~~routes~~ the communication to a particular one of a plurality of destination terminals of ~~[[the]]~~ a communication system based on ~~a determined category the category of the word, wherein the communication system comprises the processor-based device and the plurality of destination terminals.~~

4. (Currently Amended) The method of claim 1 wherein an automatic word class clustering algorithm is utilized to generate the ~~word class information~~ word-classes.

5. (Currently Amended) The method of claim 1 wherein the ~~word information and word class information utilized is selected using~~ selecting of the plurality of terms is further based on a percentile value applied to the respective information\_gain ~~based term-selection values of the terms in the union of terms.~~

6. (Currently Amended) The method of claim 5 wherein the ~~information gain based term selection determines an~~ information gain value for each ~~of a plurality of term in the union of~~ terms, ~~the information gain value being indicative of~~ indicates the average entropy variations over a plurality of possible categories, ~~and being is determined as a function of a perplexity computation for an associated classification task for each term in the union of terms.~~

7. (Currently Amended) The method of claim 1 wherein ~~a plurality of terms is generated by appending a class corpus to a word corpus~~ the category of the word is a cell in a term-category matrix, and wherein the matrix results from the latent semantic indexing.

8. (Currently Amended) The method of claim 1 wherein ~~a plurality of terms is generated by joining sets of multiple words with corresponding sets of word classes~~ the generating of the union of terms further comprises:

(iii) a second set of word-terms.

9. (Currently Amended) The method of claim 1 wherein ~~a plurality of~~ the union of terms is generated by interleaving individual ~~words~~ word-terms with their corresponding word-classes.

10. (Currently Amended) A method comprising:

receiving, ~~[[at]]~~ by a processor-based device, a communication that comprises ~~at least one a word that is a natural-language~~ word;

generating by the processor-based device a union of terms comprising:

(i) a set of word-terms, and

(ii) a set of word-classes;

selecting by the processor-based device a plurality of terms from the union of terms, wherein the selecting is based on applying a percentile value to an information-gain value of each term in the union of terms; and

classifying the communication by utilizing a joint classifier ~~based-on word information and word-class information upon the plurality of terms~~, wherein the joint classifier comprises at least one term-category matrix ~~characterizing words and word-classes-selected-using that results from the selecting based on information-gain based-term-selection values and from applying latent semantic indexing to the plurality of terms.~~

11. (Currently Amended) The method of claim 10 wherein a cell  $i, j$  of the term-category matrix comprises ~~information indicative of a relationship involving a classification by the processor-based device of~~ an  $i$ -th selected term ~~[[and]] into~~ a  $j$ -th category.

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12. (Currently Amended) A method comprising:

receiving, ~~[[at]]~~ by a processor-based device, a communication that comprises ~~at least one a word that is a natural-language~~ word;

generating by the processor-based device a union of terms comprising:

(i) a set of word-terms, and

(ii) a set of word-classes; and

selecting by the processor-based device a plurality of terms from the union of terms, wherein the selecting is based on an information-gain value of each term in the union of terms, and

~~classifying the communication by utilizing a joint classifier to determine a category for the communication based on word information and word class information;~~

~~wherein the determination of the joint classifier is based on an information gain-based term selection; and~~

wherein the ~~information-gain-based term selection~~ selecting comprises:

- i) ~~calculates~~ calculating an information\_gain value[[s]] for each ~~[[word]] term~~ in the ~~first communication union of terms[[,]]~~ a given one of the terms comprising a word or a word class that corresponds to the word,
- ii) ~~sorts~~ sorting the terms in the union of terms in a descending order of ~~by their~~ information\_gain value[[s]] in a descending order,
- iii) ~~sets~~ setting a threshold ~~as the~~ of an information\_gain value corresponding to a specified percentile, and
- iv) ~~selects~~ selecting the terms from the union of terms having an information\_gain value greater than or equal to the threshold to generate a plurality of terms.

13. (Currently Amended) The method of claim 12 wherein the selected terms in the plurality of terms are processed by the processor-based device to form a term-category matrix ~~utilizable by the~~ from which a joint classifier ~~in determining~~ determines at least one one or more categories for the ~~at least one~~ word.

14. (Currently Amended) The method of claim 12 ~~wherein the further comprising:~~  
performing by a joint classifier ~~comprises a~~ joint latent semantic indexing classifier upon the plurality of terms to determine a category for the word,  
wherein the processor-based device comprises the joint classifier.

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15. (Currently Amended) An apparatus comprising:  
a processor-based device operative to:  
receive a communication that comprises ~~at least one a~~ word that is a  
natural-language word; and  
[[to]] classify the communication by utilizing a joint classifier ~~based on that is~~  
operative to: application of word information and word class information;  
generate a union of terms comprising:  
(i) a set of word-terms, and  
(ii) a set of word-classes;  
select a plurality of terms from the union of terms, based on an  
information-gain value of each term in the union of terms; and  
perform latent semantic indexing upon the plurality of terms to determine a  
category of the word.

16. (Currently Amended) The apparatus of claim 15 wherein the processor-based device comprises a switch that is operative to route the communication, based on the category of the word, to a destination terminal of a communication system that comprises the apparatus and the destination terminal.

17. (Currently Amended) The apparatus of claim 15 wherein ~~the processor-based device comprises a processor coupled to a memory~~ the category of the word is a

**cell in a term-category matrix, and wherein the matrix results from the latent semantic indexing.**

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18. (Currently Amended) An article of manufacture comprising:

a machine-readable storage medium **that is a non-transitory storage medium and that containing comprises** software code that when executed implements the steps of:

receiving a communication that comprises ~~at least one a~~ word **that is a natural-language word;**

**generating a union of terms comprising:**

**(i) a set of word-terms, and**

**(ii) a set of word-classes;**

**selecting a plurality of terms from the union of terms, wherein the selecting is based on an information-gain value of each term in the union of terms;**

**performing latent semantic indexing upon the plurality of terms to determine a category of the word, wherein the category of the word is a cell in a term-category matrix that results from the latent semantic indexing;** and

**classifying the communication by utilizing a joint classifier based on application of word information and word class information**

**routing the communication to a destination terminal in a communication system that comprises the machine-readable storage medium and the destination terminal.**

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